



Amendments to the Claims:

The following listing of claims will replace all prior versions of claim listings in this application.

Listing of Claims

1-24. (Cancelled)

25. (New): An isolated nucleic acid molecule encoding poly (ADP-ribose) polymerase-embryonic (PARP-e) comprising a nucleotide sequence at least 70% identical to SEQ ID NO: 1.

26. (New): The isolated nucleic acid molecule of claim 25, wherein the nucleotide sequence is at least 90% identical to SEQ ID NO: 1.

27. (New): The isolated nucleic acid molecule of claim 26, wherein the nucleotide sequence encodes a PARP-e comprising SEQ ID NO: 2.

28. (New): The isolated nucleic acid of claim 25, wherein the nucleic acid molecule encodes an animal PARP-e.

29. (New): The isolated nucleic acid of claim 25, wherein the nucleic acid molecule encodes a plant PARP-e.

30. (New): The isolated nucleic acid of claims 28, wherein the nucleic acid comprises SEQ ID NO: 1.

31. (New): An isolated nucleic comprising at least 15 nucleotides of SEQ ID NO: 1.

32. (New): The isolated nucleic acid molecule of claim 30, wherein the nucleic acid consists of SEQ ID NO: 1.

33. (New): An isolated nucleic acid molecule encoding PARP-e, wherein the nucleic acid molecule hybridizes under stringent conditions to a nucleic acid molecule encoding SEQ ID NO: 2.

34. (New): The isolated nucleic acid molecule or claim 33, wherein the nucleic acid molecule hybridizes under stringent conditions to SEQ ID NO: 1.

35. (New): The isolated nucleic acid of claim 33, wherein the nucleic acid molecule encodes an animal PARP-e

36. (New): The isolated nucleic acid of claim 33, wherein the nucleic acid molecule encodes a plant PARP-e.

37. (New): An isolated nucleic acid molecule which is complementary to the nucleic acid of claim 25.

38. (New): The isolated nucleic acid of claim 25, wherein the nucleic acid is operably linked to one or more expression control elements.

39. (New): An isolated nucleic acid molecule comprising the genomic DNA corresponding to the nucleic acid molecule of claim 25.

40. (New): The isolated nucleic acid of claim 39, wherein the nucleic acid comprises SEQ ID NO: 10.

41. (New): A vector comprising the isolated nucleic acid of claim 25.

42. (New): A host cell containing the nucleic acid of claim 25.

43. (New): The host cell of claim 42, wherein the cell is an eukaryotic cell.

44. (New): The host cell of claim 43, wherein the eukaryotic cell is a plant cell or animal cell.

45. (New): The host cell of claim 44, wherein the animal cell is a yeast cell, mammalian cell or insect cell.

46. (New): The host cell of claim 42, wherein the cell is a prokaryotic cell.

47. (New): The host cell of claim 46, wherein the prokaryotic cell is a bacterium.

48. (New): A method of producing a protein comprising cultivating the host cell of claim 42 under conditions that allows expression of the protein and recovering the expressed protein.
49. (New): A method of modulating chromatin structure in a cell comprising introducing into the cell an agent that alters PARP-e expression, wherein a change in the expression of PARP-e results in modulation of chromatin structure.
50. (New): The method of claim 49, wherein the agent increases PARP-e expression.
51. (New): The method of claim 50, wherein the agent comprises the nucleic acid of claim 38.
52. (New): The method of claim 51, wherein the agent decreases PARP expression.
53. (New): The method of claim 52, wherein the agent is an antisense molecule specific for PARP-e.
54. (New): The method of claim 52, wherein the agent is an interfering RNA (RNAi) molecule specific for PARP-e.
55. (New): The method of claim 49 wherein said cell is an eukaryotic cell.
56. (New): The method of claim 55 wherein said eukaryotic cell is a plant cell or animal cell.
57. (New): The method of claim 56 wherein said animal cell is an embryonic cell.
58. (New): The method of claim 57 wherein said embryonic cell is a stem cell.
59. (New): The method of claim 49 wherein said chromatin is selected from the group consisting of heterochromatin and repetitive sequences.
60. (New): A method of inhibiting the development of an organism, comprising contacting embryonic cells with a composition containing an effective amount of an agent specific for PARP-e, wherein contact with said agent inhibits development of said organism.

61. (New): The method of claim 60, wherein the agent is an antisense molecule specific for PARP-e.
62. (New): The method of claim 60, wherein the agent is an RNAi molecule specific for PARP-e.
63. (New): The method of claim 61 wherein said organism is an eukaryote.
64. (New): The method of claim 62 wherein said eukaryote is an insect, plant or animal.
65. (New): The method of claim 63, wherein said insect is a *Drosophila melanogaster*.
66. (New): A method of inhibiting the growth of an organism, comprising contacting embryonic cells with a composition containing an effective amount of an agent specific for PARP-e, wherein contact with said agent inhibits growth of said organism.
67. (New): The method of claim 66, wherein the agent is an antisense molecule directed to the nucleic acid molecule of claim 25.
68. (New): The method of claim 66, wherein the agent is an RNAi molecule specific for PARP-e.
69. (New): The method of claim 66 wherein the organism is an eukaryote.
70. (New): The method of claim 69 wherein the eukaryote is an insect, plant or animal.
71. (New): The method of claim 70, wherein the insect is a *Drosophila melanogaster*.
72. (New): A method of suppressing a PARP mutation in a cell comprising transfecting the cell with PARP-e.
73. (New): The method of claim 72 wherein the organism is an eukaryote.
74. (New): The method of claim 73 wherein the eukaryote is an insect, a plant or an animal.
75. (New): The method of claim 74, wherein the insect is a *Drosophila melanogaster*.